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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,939	01/11/2002	Lisa Dhar	495812001900	9372
20872	7590	09/07/2004	EXAMINER	
MORRISON & FOERSTER LLP 425 MARKET STREET SAN FRANCISCO, CA 94105-2482			DICUS, TAMRA	
			ART UNIT	PAPER NUMBER
			1774	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/043,939	Applicant(s) DHAR ET AL.	
	Examiner Tamra L. Dicus	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-48 and 50-53 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 20-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19, 40-48, 50-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

This office action is responsive to the amendment of 06/15/04. The cancellation of claim 49 is acknowledged.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-12, 14-15, 17-19, 40-41, 43-44, 46-48, and 50-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,932,045 to Campbell et al. in view of USPN 5,606,433 to Yin et al. and further in view of USPN 6,434,299 to Yudin et al.

Campbell teaches a system comprising a first and second substrate having an adherent between the substrates in Figures 2-5. See patented claims 1, 3, and 4 teaching all the limitations to the flatness and waviness requirements and Strehl value. The substrate can be any shape. The same materials are taught; therefore the optically reflective property is inherent (claim 40). See col. 3, lines 55-60, col. 4, lines 25-68, col. 11, lines 30-50, col. 12, lines 49-64, and col. 13, line 55-col. 14, line 14. See col. 12, lines 55-65 teaching properties of thickness between 0.1 to 1 mm and transmission flatness values from 0.1 to 10 waves/cm. Campbell does not teach adding a third substrate via photopolymer adherent, but such an addition is merely duplicated as

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Campbell already provides the first and second substrate having adherent therebetween.

Campbell further provides suggestion to include holograms at col. 12, lines 49-61 between substrates, teaching any transparent material used in holograms such as holographic memory cells (functional equivalent to holographic storage of instant claim 40) may be used as substrates. Additionally, Yin teaches lamination of multilayered holograms to glass via a partially UV hardened photopolymer just as applicant intends (instant claim 18) also using the same materials as applicant. See the teaching of Yin at col. 4, lines 15-25 and 55-60. Further at col. 5, lines 10-23, Yin provides teaching such laminated substrate/photopolymer structures are used for optical structures such as a windshield. It would have been obvious to one having ordinary skill in the art to include an additional third substrate via adherent because Yin provides such a lamination technique is a practiced technique for optical substrates, and further since it has been held that mere duplication of the essential working parts of a device (i.e. substrate/adherent) involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

2. To the type of curing process utilized (thermal or radiation) as described in instant claims 18 and 47, the adherent is cured, therefore, how it was done is not given patentable weight. Such limitations are process limitations in product claims. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Patentability of an article depends on the article itself and not the method used to produce it (see MPEP 2113). Furthermore, the invention defined by a product-by-process invention is a product NOT a process. *In re Bridgeford*, 357 F. 2d 679. It is the patentability of the product claimed and NOT of the recited process steps which must be established. *In re Brown*, 459 F. 2d 531. Both Applicant's and prior art reference's product are the same.

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Regarding the thickness from 25 micrometers to 3 millimeters of the substrates (instant claims 15 and 44), such limitations are optimizable features. It would have been obvious to one of ordinary skill in the art to produce a thickness as required, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272. Thickness effects surface and transmission flatness as explained by Campbell at col.2, lines 21-22.

Campbell does teach that the adherent is capable of storing data at col. 13, lines 9-15 (instant claim 40).

Campbell does not teach diffractive gratings of instant claims 17 or 46 nor reflective additions as required in claims 50-53. However, Yudin provides wavelength division multiplexing having diffraction gratings for optical elements such as holograms and substrates such as glass and plastic. See col. 8, lines 34-46 where Yudin teaches the following: Reflective concave diffraction grating 16 can be formed from a variety of materials and by a variety of techniques. For example, the reflective concave diffraction grating 16 can be formed by a three-dimensional hologram in a polymer medium, or by replicating a mechanically ruled master with a polymer material. In both cases, the polymer is overcoated with a thin, highly reflective metal layer such as, for example, gold or aluminum. Alternatively, the reflective concave diffraction grating 16 can be formed by chemically etching into a concave material such as, for example, glass or silicon, which is also overcoated with a thin, highly reflective metal layer such as, for example, gold or aluminum. Such teaching is equivalent to providing reflective layers of gold or aluminum on substrates as required by instant claims 49-53. It would have been obvious to one of ordinary skill in the art to include reflective layers of gold or aluminum on substrates and to

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contain diffractive grating because Yudin teaches the application for forming three-dimensional holograms as cited above.

Claims 16 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,932,045 to Campbell et al. in view of USPN 5,606,433 to Yin et al. and further in view of USPN 6,434,299 to Yudin et al. and further in view of USPN 4921319 to Mallik.

Campbell is relied upon above. Campbell does not teach relief patterns on surfaces of substrates. Mallik teaches surface relief hologram structures where surface relief patterns are facing the substrates on transparent holograms. See col. 2, lines 45-50. It would have been obvious to one of ordinary skill in the art to provide surface relief patterns on substrates because Mallik teaches relief patterns conventionally provide light diffracted differently at col. 1, lines 20-32.

Claims 13 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,932,045 to Campbell et al. in view of USPN 5,606,433 to Yin et al. and further in view of USPN 6,434,299 to Yudin et al. and further in view of USPN 6671073 to Hegel.

Campbell is relied upon above. Campbell does not teach adding holes to a substrate as required per instant claims 13 and 42. Hegel teaches holographic devices for storage where substrates have holes and a photopolymer layer is injected into the gap between the two substrates 24 and 26 through the hole 25 defined in the upper substrate 24 for instance. See col. 5, lines 5-15. It would have been obvious to one of ordinary skill in the art to include holes to

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allow photopolymer because Hegel teaches doing so to get faster cycle times as taught at col. 5, line 20.

***Response to Arguments***

Applicant's arguments filed 06/15/04 have been fully considered but they are not persuasive. Applicant argues the use of Yudin alleging Yudin is not analogous and the Examiner used hindsight analysis to teach a reflective layer. Applicant also argues because Yudin teaches a curved surface, channel crosstalk, and improved wavelength division devices using concave diffraction gratings, it would not be combinable. The Applicant has not persuasively argued. The rejection is over Campbell in view of Yin which teaches essentially a similar structure with the same flatness requirements taught by Campbell. While neither Campbell or Yin teach a reflective article, both reference suggest using holograms (see Campbell col. 12, lines 49-61). Yudin teaches using reflective layers of gold or aluminium to form three-dimensional holograms in optical articles (col. 8, lines 34-46). Campbell teaches not only the flatness requirement, but also teaches the patented construction can also be used with bowed optical articles (see col. 2, lines 58-62 and col. 6, lines 60-68). Thus, the Examiner used analogous art and did not use hindsight in the rejections. To applicant's argument of Yudin disclosing channel crosstalk and improved wavelength devices using concave diffraction gratings does not teach away from the invention because Yudin teaches using reflective layers to form three-dimensional holograms as explained above.

***Conclusion***

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

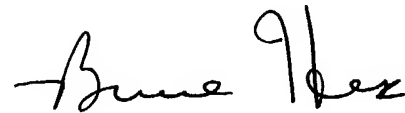


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tamra L. Dicus  
Examiner  
Art Unit 1774

September 2, 2004

A handwritten signature in black ink, appearing to read "B. Hamilton Hess". The signature is fluid and cursive, with the first name "B." and last name "Hess" clearly distinguishable.

**B. HAMILTON HESS**  
**PRIMARY EXAMINER**